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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,109	12/01/2003	Arkady Glukhovsky	P-5453-US	8741

27130 7590 06/28/2005

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EXAMINER

SMITH, PHILIP ROBERT

ART UNIT PAPER NUMBER

3739

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

6

Office Action Summary	Application No.	Applicant(s)	
	10/724,109	GLUKHOVSKY ET AL.	
	Examiner	Art Unit	
	Philip R. Smith	3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 1-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/01/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Restrictions

[01] Restriction to one of the following inventions is required under 35 U.S.C. 121:

[01a] I. Claims 1-33, drawn to an in vivo device and system with a light sensor and a non-image sensor, classified in class 600, subclass 118.

[01b] II. Claims 34-43, drawn to a method and apparatus for sampling and converting non-image data into image data, classified in class 600, subclass 160.

[02] The inventions are distinct because of the following reason:

[02a] Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as an endoscope which relays non-image data via an image sensor. See MPEP § 806.05(d).

[03] It is necessary to search for relay of non-image data via an image sensor in subclasses other than those in which the mere collection of data would otherwise be found, therefore causing a serious burden to the examiner.

[04] Claims 1-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group. Applicant timely traversed the restriction (election) requirement over the telephone on 20 June 2005.

Specification

- [05] A more descriptive title is suggested: "Method and apparatus for transmitting non-image information via an image sensor in an in vivo imaging system."

Claim Rejections - 35 USC § 112

- [06] The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- [07] Claim 41, and claims 42-43 which incorporate it, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
- [08] Applicant claims a converting means for converting said non-image sensor information to optical information, and a relaying means for relaying said non-image sensor information to an image sensor thereby obtaining image sensor information. The apparent intent is to claim a "relaying means for relaying said ~~non-image sensor~~ optical information to an image sensor."

Claim Rejections - 35 USC § 102

- [09] The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[10] Claims 34-36 & 39-43 are rejected under 35 U.S.C. 102(e) as being anticipated by

Meron, et al (2002/0042562), filed 26 September 2001.

[11] Meron discloses in [0046] a method for transmitting in vivo non-image information, said method comprising:

[11a] obtaining non-image sensor information (detecting “substances in an in vivo environment, such as blood, sugar, amino acids, microorganisms etc, or of conditions prevalent in an in vivo environment, such as pH, temperature”);

[11b] converting said non-image sensor information to optical output (reacting “to the presence of substances or environmental conditions by causing an optical change”);

[11c] relaying said optical output to an image sensor thereby obtaining image sensor information (including “optical information in the angle of view of the imaging system”); and

[11d] transmitting said image sensor information to an external receiver (providing “an external operator with images of the in vivo site and

simultaneously with information relating to the environmental conditions at the in vivo site”).

- [12] Meron further discloses displaying sampled image sensor information (providing “an external operator with images of the in vivo site and simultaneously with information relating to the environmental conditions at the in vivo site,” [0046]).
- [13] Meron further discloses that image sensor information is obtained from the gastrointestinal tract (“from the gastrointestinal (GI) tract,” abstract).
- [14] Meron further discloses interpreting the non-image information sampled and displaying the interpreted non-image sensor information (“sensing device, such as an imaging system, may further be in communication with a processor/control for analyzing the data detected by it,” [0027]).
- [15] Meron discloses in [0046] an in vivo imaging system comprising:
- [15a] a sampling means for obtaining non-image information from a non-image sensor (“detector of substances in an in vivo environment, such as blood, sugar, amino acids, microorganisms etc, or of conditions prevalent in an in vivo environment, such as pH, temperature”);
 - [15b] a converting means for converting said non-image sensor information to optical information (“...reacts to the presence of substances or environmental conditions by causing an optical change”);
 - [15c] a relaying means for relaying said non-image sensor information to an image sensor thereby obtaining image sensor information (“adhered to the

housing in such a way that it is included in the angle of view of the imaging system"); and

[15d] a transmitting means for transmitting said image sensor information to a receiver ("provide an external operator with images of the in vivo site and simultaneously with information relating to the environmental conditions at the in vivo site").

[16] Meron further discloses a displaying means for displaying sampled image sensor information ("provide an external operator with images of the in vivo site and simultaneously with information relating to the environmental conditions at the in vivo site").

[17] Meron further discloses an interpreting means for interpreting the non-image sensor information sampled by the image sensor ("sensing device, such as an imaging system, may further be in communication with a processor/control for analyzing the data detected by it," [0027]).

Additional Claim Rejections - 35 USC § 102

[18] Claims 34-37 & 39-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Takayama et al. (5,088,492), patented 18 February 1992.

[19] Takayama discloses in the ninth embodiment of his invention (column18/ line43 - column19/ line29) a method for transmitting in vivo non-image information, said method comprising:

[19a] obtaining non-image sensor information and converting said non-image

sensor information to optical output ("tubular collimator 163" with "light intercepting filter ' provided on the front surface of each of the radioactive ray detecting pixels 162," 18/49-57);

[19b] relaying said optical output to an image sensor thereby obtaining image sensor information (via "radioactive ray detecting pixels 162"); and

[19c] transmitting said image sensor information to an external receiver, interpreting the non-image information sampled, and displaying the sampled image sensor information ("radioactive ray information 167 will be displayed as a brightness corresponding, for example, to the intensity of the four corner parts outside this observed picture image 166," 19/1-3).

[20] Takayama further discloses that image sensor information is obtained as a "as a means of discovering and diagnosing a cancer," (1/18-19). Conventionally, cancer diagnosis is extended to the gastrointestinal tract.

[21] Takayama further discloses directing the non-image sensor information to a specified location ("four corner parts outside this observed picture image," 19/1-3) on the image sensor via an optical guide ("collimator 163").

Additional Claim Rejections - 35 USC § 102

[22] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[23] Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meron in view of Crowley (6185443), patented 6 February 2001.

[24] Meron discloses the entirety of claim 34, including the conversion of non-image-sensor information (e.g. pH level) to optical output (disclosed generally as "optical change," above noted). Meron does not disclose electrically connecting an illumination source to a non-image sensor to particularly achieve said conversion.

[25] Crowley discloses electrical connection of an illumination source ("light emitting diodes (LEDs) 38a, 38b for providing a visible signal indicative of the bodily condition within a pre-existing field of view... electrically connected to a signal processor 40 via electrical lines 42," 4/13-17) to a non-image-sensor ("sensed bodily condition," 4/37-39).

[26] At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the "optical change" of Meron's invention, in reduction to practice, be effected as is well-known in the art. As disclosed by Crowley, LEDs are a well-known effector of optical change.

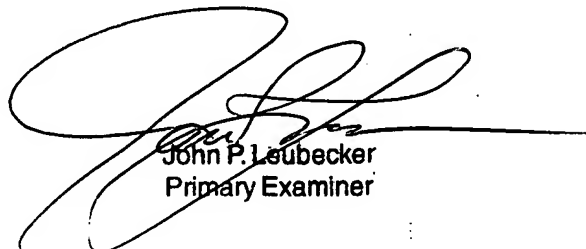
Conclusion

[27] The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oku (5,224,467) discloses a direction indication mechanism which indicates direction via an image sensor.

Art Unit: 3739

- [28] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip R Smith whose telephone number is (571) 272 6087 and whose email address is philip.smith@uspto.gov. The examiner can normally be reached on 10:00-6:00.
- [29] If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (571) 272 4764. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
- [30] Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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John P. Leubecker
Primary Examiner